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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,376	09/24/2001	Masatoshi Takada	2001_1305A	7495

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WASHINGTON, DC 20006-1021

EXAMINER

ENG, GEORGE

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,376

Applicant(s)

TAKADA, MASATOSHI

Examiner

George Eng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10, 12-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10, 12-14 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment filed 12/29/2004. Accordingly, claims 1, 11 and 15 are cancelled and claims 2-10, 12-14 and 16-18 are pending for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/101,072 and claims 1-28 of copending Application No. 09/960,377. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed limitation, such as input signal control means, interference-signal estimation means, interference signal extraction means and inference signal removing means, are

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transparently found in copending Application No. 10/101,072 and copending Application 09/960,377 with obvious wording variations.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-10, 12-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhodzishsky et al. (US PAT. 6,219,376 hereinafter Zhodzishsky) in view of Jagger et al. (US PAT. 6,807,405 hereinafter Jagger).

Regarding claim 2, Zhodzishsky discloses an interference-signal removing apparatus (400, figure 4) for suppressing a narrow-band interference signals from input signals ($U_k(t)$, figure 4) including wide-band desired signals and the narrow-band interference signals, the interference-signal removing apparatus comprising interference-signal estimator circuit (20, figure 4) for estimating interference signal included in input signals in accordance with the input signal, interference-signal extraction circuit (15, figure 4) for extracting interference signals included in input signals in accordance with an estimation result by the interference-signal estimation means, and interference-signal removal circuit (40, figure 2) for removing extracted

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interference signal from input signals (col. 13 line 12 through col. 15 line 67 and col. 21 line 41 through col. 25 line 67). Zhodzishsky differs from the claimed invention in not specifically teaching the apparatus comprising input-control circuit for restricting an effective word length of a digital value of respective input signals. However, Jagger teaches a device for maintaining the performance quality in presence of narrow band interference comprising an oscillator (41, figure 5), read as input signal control circuit, for inserting digital word of respective input signal, i.e., SS signal, in order to minimize the adverse affect of narrow band interference (abstract and col. 6 line 36 through col. 7 line 61). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Zhodzishsky in having input-control circuit for restricting the effective word length of a digital value of respective input signals, as per teaching of Jagger, in order to minimize the adverse affect of narrow band interference.

Regarding claim 3, Zhodzishsky teaches to extract interference signals from input signal (col. 14 lines 28-33).

Regarding claim 4, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 5, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 6, the limitations of the claim are rejected as the same reasons set forth in claim 2. In addition, Jagger teaches to set the effective notch filter to excise the interference signal from the SS signal (col. 7 lines 4-15) so that on skill in the art would recognize the oscillator operable to multiply the input signal by control coefficient of less than 1.

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Regarding claim 7, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 8, Zhodzishsky discloses to estimating levels of interference signals included in input signals and control input signals in accordance with estimated interference signal level (col. 14 lines 25-42).

Regarding claims 9-10, the limitations of the claims are rejected as the same reasons set forth in claim 8.

Regarding claim 12-13 and 16-17, the limitations of the claims are rejected as the same reasons set forth in claim 2.

Regarding claims 14 and 18, the limitations of the claims are rejected as the same reasons set forth in claim 6.

Response to Arguments

6. Applicant's arguments with respect to claims 2-10, 12-14 and 16-18 have been considered but are moot in view of the new ground(s) of rejection.

In addition, the double patenting rejection will be withdrawn if a proper terminal disclaimer is filed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Jokinen (US PAT. 6,532,254) discloses a method for simplifying an interference cancellation of multi-user detection in a direct sequence code division multiple access telecommunication system by generating a narrow band interfering signal in an interference cancellation primitives of a receiver by multiplying a detected bit of an interference signal by a cross correlation and a channel estimate of spreading codes (abstract and col. 2 line 54 through col. 4 line 65).

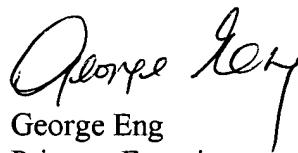
Uchiyama et al. (US PAT. 6,744,828) discloses a receiving apparatus for suppressing the influence due to noise components contained in a receiving signal in order to improve a carrier to noise ratio, thereby the signal can be received with high quality (col. 2 line 25 through col. 3 line 20).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Eng whose telephone number is 703-308-9555. The examiner can normally be reached on Tue-Fri 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A. Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "George Eng", is positioned above the printed name.

George Eng
Primary Examiner
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